



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,967	02/14/2002	Jennifer Y. Sun	005120 USA/ETCH/IBSS	9245

32588 7590 05/06/2003

APPLIED MATERIALS, INC.  
2881 SCOTT BLVD. M/S 2061  
SANTA CLARA, CA 95050

EXAMINER

MOORE, KARLA A

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/075,967

Applicant(s)

SUN ET AL.

Examiner

Karla Moore

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 6-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 6-12 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-5, drawn to a substrate process chamber component, classified in class 156, subclass 345.1.
  - II. Claims 6-12, drawn to a method for manufacturing a substrate process chamber component, classified in class 427, subclass 454.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the coating could be formed by impregnating yttrium ions into an already oxidized surface and forming yttrium oxide by calcination, rather than applying the yttrium oxide as a coating.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Ms. Loretta Peters on 4/29/03 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-5. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6-12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Publication No. 03-287797A to Inasawa et al.

7. Inasawa et al. disclose a substrate process chamber component comprising : at least one internal component formed from anodized aluminum alloy; and a yttrium oxide coating formed on a surface of the at least one internal component (see Derwent abstract and JPO abstract).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inasawa et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,798,016 to Oehrlein et al.

10. Inasawa et al. disclose the invention substantially as claimed and as described above.

11. However, Inasawa fails to teach the component as a chamber liner.

12. Oehrlein et al. teach the use of a liner composed of a aluminum alloy and coated with an yttrium oxide coating for use in a processing chamber for the purpose of protecting the walls from plasma generated during an etching process (column 5, rows 24-39).

13. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a chamber liner as the anodized aluminum alloy component with the yttrium oxide film in Inasawa et al. in order to protect the chamber walls as taught by Oehrlein et al.

Art Unit: 1763

14. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inasawa et al. as applied to claim 1 above, and further in view of U.S. Patent Publication No. 2001/0003271 A1 to Otsuki.

15. Inasawa et al. disclose the invention substantially as claimed and as described above.

16. However, Inasawa fails to teach the component as a cathode liner.

17. Otsuki teach lining (14) various surfaces within a processing apparatus such as a cathode and the chamber walls (see Figure 1) for the purpose of providing high-corrosion resistance and insulating property to exposed surfaces within the chamber (abstract). Limited information was given regarding the cathode liner in the specification or the claims of the present invention. In Otsuki, the showerhead electrode acts as a cathode and it is illustrated as being surrounded by a liner.

18. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a cathode liner or a chamber liner as the anodized aluminum alloy component with the yttrium oxide film in Inasawa et al. in order to protect the showerhead electrode as taught by Otsuki.

19. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inasawa et al. as applied to claim 1 above, and further in view of Japanese Patent No. 2001023908A to Okada et al.

20. Inasawa et al. disclose the invention substantially as claimed and as described above.

21. However, Inasawa fails to teach the component as a chamber door.

22. Okada et al. teach the use of a door/gate valve composed of a aluminum alloy for use in a processing chamber for the purpose of improving corrosion resistance (abstract).

23. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a gate as the anodized aluminum alloy component with the yttrium oxide film in Inasawa et al. provided a component such as a gate valve with increased corrosion resistance as taught by Okada et al.

24. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inasawa et al. as applied to claim 1 above, and further in view of U.S. Patent No. 6,521,046 to Tanaka et al.

Art Unit: 1763

25. Inasawa et al. disclose the invention substantially as claimed and as described above.
26. However, Inasawa fail to teach the anodized aluminum alloy as high purity aluminum alloy, where high purity describes an aluminum alloy with all impurities other than MG being **less than about 0.1 wt%** each, particularly Si, Fe and Cu.
27. Tanaka et al. teach the use of an anodized aluminum alloy with each of the weight percents of the metals that comprise the alloy being less than **about 0.1%** for the purpose of providing an aluminum alloy excellent in thermal cracking resistance and chemical and/or physical corrosion resistance and capable of reducing contamination excellently and further having excellent and wide applicable brazing property in a high temperature corrosive circumstance (abstract).
28. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an anodized aluminum alloy as defined above in Inasawa et al. in order to provide an aluminum alloy excellent in thermal cracking resistance and chemical and/or physical corrosion resistance and capable of reducing contamination excellently and further having excellent and wide applicable brazing property in a high temperature corrosive circumstance as taught by Tanaka et al.

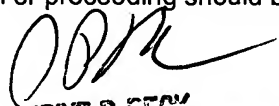
### **Conclusion**

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

  
SHRIVE P. BECK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700